In the two firſt Columns are expreſſed the obliquities of the incident and emergent rays to the plate of the Air, that is, their angles of incidence and refraction. In the third Column the Diameter of any coloured Ring at thoſe obliquities is expreſſed in parts, of which ten conſtitute that Diameter when the rays are perpendicular. And in the fourth Column the thickneſs of the Air at the circumference of that Ring is expreſſed in parts of which alſo ten conſtitute that thickneſs when the rays are perpendicular.

And from theſe meaſures I ſeem to gather this Rule: That the thickneſs of the Air is proportional to the ſecant of an angle, whoſe Sine is a certain mean proportional between the Sines of incidence and refraction. And that mean proportional, ſo far as by theſe meaſures I can determine it, is the firſt of an hundred and ſix arithmetical mean proportionals between thoſe Sines counted from the Sine of refraction when the refraction is made out of the Glaſs into the plate of Air, or from the Sine of incidence when the refraction is made out of the plate of Air into the Glaſs.

OBS. VIII.

The dark Spot in the middle of the Rings increaſed alſo by the obliquation of the Eye, although almoſt inſenſibly. But if inſtead of the Object-Glaſſes the Priſms were made uſe of, its increaſe was more manifeſt when viewed ſo obliquely that no Colours appeared about it. It was leaſt when the rays were incident moſt obliquely on the interjacent Air, and as the obliquity decreaſed it increaſed more and more until the coloured Rings appeared,

peared, and then decreaſed again, but not ſo much as it increaſed before. And hence it is evident, that the tranſparency was not only at the abſolute contact of the Glaſſes, but alſo where they had ſome little interval. I have ſometimes obſerved the Diameter of that Spot to be between half and two fifth parts of the Diameter of the exterior circumference of the red in the firſt circuit or revolution of Colours when viewed almoſt perpendicularly; whereas when viewed obliquely it hath wholly vaniſhed and become opake and white like the other parts of the Glaſs; whence it may be collected that the Glaſſes did then ſcarcely, or not at all, touch one another, and that their interval at the perimeter of that Spot when viewed perpendicularly was about a fifth or ſixth part of their interval at the circumference of the ſaid red.

OBS. IX.

By looking through the two contiguous Object-Glaſſes, I found that the interjacent Air exhibited Rings of Colours, as well by tranſmitting Light as by reflecting it. The central Spot was now white, and from it the order of the Colours were yellowiſh red; black; violet, blue, white, yellow, red; violet, blue, green, yellow, red, &c. But theſe Colours were very faint and dilute unleſs when the Light was trajected very obliquely through the Glaſſes: For by that means they became pretty vivid. Only the firſt yellowiſh red, like the blue in the fourth Obſervation, was ſo little and faint as ſcarcely to be diſcerned. Comparing the coloured Rings made by reflexion, with theſe made by tranſ-